REMARKS

Claim 3 has been previous cancelled. The claims remaining in the application are claims1-2.

THE INTERVIEW

Applicant gratefully acknowledges the courtesies extended to applicant' s attorney, Norman Rushefsky, allowing him to present various arguments at the interview on January 22, 2007. At the interview applicant's attorney presented what are submitted to be sufficient reasons for allowing entry of the very limited amendment to claim 1. As was pointed out in the interview, the preamble of the claim identifies both a printing press and a color proofer. In the step of making a press sheet claim 1 now identifies that such sheet is made using "said printing" press. Thus, what was previously implicit in the claim is now made explicit and is submitted to not raise any new issues for consideration by the Examiner.

Regarding the patentability of the claims over the cited prior art, applicant's attorney provided what are respectfully submitted to be sufficient arguments for overcoming the rejection under 35 U.S.C. 103. Claim 1 makes repeated reference to the term "binary digital data" as the type of data which is used to make the printing plate and used by the color proofer to print the halftone color proof. It is respectfully submitted that consideration should be given by the Examiner to the term "binary." At the interview it was explained that the term binary digital data implies print or no print decisions and is distinguishable from gray level digital data or higher-level computer digital data used by raster image processors and computers. Binary digital data for a respective pixel represents a print or no print decision at that pixel location. Gray level digital data is distinguishable from binary digital data in that at a pixel location and in accordance with the multibit data for that pixel location a spot may or may not be printed <u>and</u> the size of the spot is determined by the digital data. Thus, for gray level digital data several different spot sizes are possible at a particular pixel location. Digital data may also be expressed in higher-level digital languages and an example of such in Ito et al. will be discussed below. In the arguments presented below and discussed at the interview it is submitted that sufficient arguments have been provided to show that none of the prior art references

utilizes the same binary digital data for use in printing the press sheet and the color proof and thus that claim 1 cannot be said to be unpatentable in view of the combination of prior art references cited by the Examiner.

Ito et al. (U.S. 6,378,983 B1) discloses the use of the same RIP for providing digital data to both a color proofer (an inkjet printer) and a planographic print output unit. As noted in column 1, line 17-37, the reason for using a single RIP in Ito et al. is that different RIPS may use slightly different Japanese character sets or fonts. Using one RIP for both types of printer units eliminates any difference in character font creation by the respective printers. In response to a high-level computer command input to the RIP (a two byte or 16 bits signal) an outline of a character is generated by the RIP (see column 3, lines 7-9). The RIP must also fill this outline with data bits. As noted in column 9, lines 36-58 of Ito et al. the color proofer is an inkjet machine of 300 dpi at most and the planographic print press of Ito et al. employs an output resolution of 3048 dpi. Thus, any binary digital data created by Ito et al. differs by an order of 10 in terms of resolution between the two machines and the RIP must accommodate these differences with different binary digital data to the respective different machines. For a halftone image the Rip would be required to form different halftone generated data. Furthermore, in Ito et al. because the inkjet printer uses such relatively a large ink drop size, color fidelity between prints made by the color proofer and prints made by the press printer requires that additional colors of ink such as light cyan and light magenta need to be used in addition to cyan, magenta, yellow and black inks (see column 4, lines 1-15). The press sheet printer on the other hand is a four-color printer as noted in column 9, lines 59-66. Thus, because six colors are required to be supported by the color proofer printer while four colors are to be supported for the proof sheet printer the RIP must provide different digital data to each of these very different printers.

Barry et al. (U.S. 5,309,246) is cited by the Examiner for disclosing the use of a dot gain processor in a digital color proofing system for conditioning binary image data with dot gain elements. As noted by the applicant's attorney at the interview the problem in Barry et al. is that the color proofer employs the standard primary colors of cyan, magenta, yellow and black for halftone printing. However, the printing press employs a specialty color which may comprise for example a metallic type of color, see in this regard Barry

et al. column 2, lines 7-65. An object of Barry et al. is to try to reasonably have the output of the four color proofing system match the output of the press printer having six colors, which prints with various combinations of these colors to form a multitude of colors. Quite obviously a printer that employs six colors will require a different set of image data than a printer that employs four colors. Thus, Barry et al. also teaches away from applicant' s invention of using the same binary image data for use in printing a color proof using the color proof printer and printing a press sheet using a planographic print press.

Dohnomae (U.S. 6,072,588) was also discussed at the interview. This reference has not been applied against claim 1 and was merely cited by the Examiner to show the use in the prior art of a filtering process that employs a spatial filter in a method and apparatus for generating a proof. It was noted at the interview by applicant's attorney that Dohnomae also must employ different binary image data for creating a press print and for creating a color proof. Specifically, each printer employs a different threshold for generating the respective print and this implies that separate RIPS are being used in this reference.

Rejection Under 35 U.S.C. § 103

The Office Action has rejected claim 1 under 35 U.S.C. 103(a) as being unpatentable over the Applicant's admission as prior art in view of Ito et al. (U.S. 6,379,983) and Barry et al. (U.S. 5,309,246). This rejection is respectfully traversed.

The Office Action objects to present invention in view of Ito et al. and Barry et al. It is true that in the prior art, shown in Figure 1, two RIPs each provide binary data to each of the printing press and the color proofer. The prior art does teach using two RIPs with different dot gain curves. The prior art also teaches screening twice with one RIP using two different dot gain curves. This binary data is not the same however, as each set of binary data has been modified with a dot gain curve dependent upon the final printing device. The prior art requires the original artwork in order to facilitate screening it with a second dot gain curve for proofing.

In Figure 2, Ito shows an alternate method of applying dot gain to the proof to apply a color profile to an image prior to the raster image processor

(RIP). This would require separate color profiles for the proof and plate, and would be applied prior to screening the binary data.

The present invention uses one RIP with one dot gain curve to generate a set of binary data, then the invention modifies the binary data, which has been processed by one original RIP, to change the dot gain in order to create a proof. The prior art cited by the examiner does not accomplish this. The prior art does not teach modifying a binary bitmap screened once, with a dot gain curve for one printing device, to achieve the correct dot gain on a second printing device with the first binary bitmap.

Ito describes compensating the color of the proofer. See Col. 11, lines 12-58 through Col. 12, lines 1-19). Ito describes printing a test target, measuring the test target, then compensating the original and reprinting to match the color. This method of compensation will re-rip or re-screen the original image after adjusting its color. The original artwork is required to create the proof, Col. 10, line 65, refers to preparing the TIFF data for ink jet printer output with the RIP herein, and Col. 11, line 12 refers to the "profile of compensating the difference between the color reproduction regions". Ito does not teach how to apply the profile to the TIFF data, either prior to the RIP or applying it to the TIFF image in Photoshop prior to the RIP. If Ito is applying the profile after the RIP he does not state how to do so. If Ito is applying a color profile after the RIP as per his Fig 2, then the image out of Ito's RIP is not binary, rather it must contain color information such that there is more than two levels per pixel. The input used to make the proof is a multi-level per pixel image. Ito specifies the content of the test target as having 239 color chips, Col. 11, line12-14. This implies that the TIFF file to which the profile is applied has multiple levels per pixel. Changing colors or performing selective color edit may be performed within Photoshop. Photoshop may also be used to apply a profile with a RIP prior to screening. Applicant is not aware of any data method of applying a profile to screened binary bitmap data. The invention describes how to adjust the dot gain of a screened binary bitmap, but it does not describe how to apply a color profile. Applying a profile to change one on color to a different on color does not make a lot of sense. Ito implies that he is correcting many colors, so the image that the profile is working with may not be a binary bitmap with binary pixels.

The Office Action cites Barry et al. (Figure 2, element 205: IMAGE DATA) sent to dot-gain processor (Figure 2, element 200) for conditioning the binary image data with DOT GAIN elements (232, 234, 236, 238) to introduce a predetermined level of dot-gain before transmitted to a color proofer (Figures5A-5B, element 500: DIRECT DIGITAL COLOR PROOFING (DDCP) SYSTEM). However Barry et al. teaches that after applying dot-size lookup tables the resulting contone values are electronically screened, (Col. 4, lines 40-45), to yield appropriate binary bit-mapped values. Furthermore, (Col. 4, lines 51-57), specifies that the dot size table preferably exists within a raster image processor (RIP) which accepts incoming contone files. These contone files are the original artwork and are not the same as the binary halftone files created from a first rip with a first dot-gain curve as specified in our invention. Thus Barry et al. does not teach one how to modify binary halftone data to modify the dot-gain nor create a proof. The contone files consist of pixels that have more than two levels per pixel. The input used to proof is not a binary bitmap file.

The Office Action has rejected claim 2 under 35 U.S.C. 103(a) as being unpatentable over the Applicant's admission as prior art in view of Ito et al. (U.S. 6,378,983) and Barry et al. (U.S. 5,309,246), and further in view of Donhnomae (U.S. 6,072,588). This rejection is respectfully traversed.

The Office Action cites Dohnomae as disclosing a method of an apparatus for generating proof in which an image bit map data (binary digital data) used to generate a proof for a printed color document is processed (convoluted) with a filtering process for cutting off a spatial frequency response spatial filtering, Col. 4, lines 20-32. Dohnomae, Figure 1, shows an image being read, S1, to create gradation image data, 1a, and converted into colors, S2, to create halftone-dot area percentage data, aj, which is then further processed with the step of comparing threshold with data, S10, to create the color proof, CPb. The step of comparing threshold with data S10 is a screening operation, normally performed within a raster image processor. The input to this step is the original artwork converted into halftone-dot area percentage data. The input is not a binary bitmap file. Dohnomae also shows creating of the bit map data, bj, using step compare threshold with data, S5, prior to the process-plate film, 16, step and creation of the print, P. The present invention operates directly on the binary bitmap data, bj, and does not use the original artwork 1a, nor the halftone-dot area

percentage data, aj. Dohnomae does not teach how to create a color proof from the original binary bitmap data, bj, used to create the printed color document, P. Dohnomae teaches to screen the original image twice, using two threshold matrixes, 14, 24. Dohnomae's halftone-dot area percentage data is multi-level. Each pixel contains a level between 0 and 100%. The input to the proofing data stream is not a binary, one of two, level pixel.

CONCLUSION

None of the prior art cited in the Office Action teaches how to modify screened halftone binary bitmaps to adjust dot gain. All of the prior art applies dot gain or color profiles to original continuous tone or multilevel pixel data. Then the modified data requires screening in order to image on a binary device.

Dependent claims not specifically addressed add additional limitations to the independent claims, which have been distinguished from the prior art and are therefore also patentable.

In conclusion, none of the prior art cited by the Office Action discloses the limitations of the claims of the present invention, either individually or in combination. Therefore, it is believed that the claims are allowable.

If the Examiner is of the opinion that additional modifications to the claims are necessary to place the application in condition for allowance, he is invited to contact Applicant's attorney at the number listed below for a telephone interview and Examiner's amendment.

Respectfully submitted,

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If the Examiner is unable to reach the Applicant(s) Attorney at the telephone number provided, the Examiner is requested to communicate with Eastman Kodak Company Patent Operations at (585) 477-4656.